A4

Fig. 3 illustrates a process in which, in addition, the process step of extraction of residual monomers and accompanying substances from phase I is carried out and the sc fluid is recycled.

**Detailed Description of the Invention:**

**IN THE CLAIMS:**

Please CANCEL claims 1-27 without prejudice.

Please ADD new claims 28-54 as follows:

28. (New) A process for preparing a polymer powder in a supercritical fluid comprising:

(a) reacting in a homogeneous phase at least two copolymerizable ethylenically unsaturated monomers with an initiator, said reacting occurring in a supercritical fluid, to form a reaction mixture; and

A5

(b) converting the reaction mixture to said polymer powder by depressurizing and removing the supercritical fluid from the reaction mixture.

29. (New) The process of claim 28 wherein, after said reacting, said process further comprises:

adding additional supercritical fluid or altering the temperature or pressure of the reaction mixture to form at least two phases, a phase I containing predominantly polymer and supercritical fluid and a phase II containing predominantly unreacted monomers and supercritical fluid; and

separating said phase I from said phase II,

wherein said phase I is the reaction mixture converted during said converting.

30. (New) The process of claim 28 wherein the supercritical fluid is a non-reactive supercritical solvent.

31. (New) The process of claim 28 wherein said reacting comprises at least three copolymerizable ethylenically unsaturated monomers and at least one monomer containing an additional functional group.